

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An apparatus for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising:

a channel estimator for generating a first signal by performing channel estimation using [[the]] a first channel signal;

a channel compensator for generating a second signal by channel-compensating [[the]] a second channel signal using the first signal; and

a power ratio detector for generating absolute values of symbols constituting the second signal, selecting absolute values in a predetermined length after sorting the absolute values in magnitude order, calculating an average value of the selected absolute values, calculating a square of an absolute value of the first signal, and generating the power ratio using a ratio of the average value to the square of the absolute value of the first signal.

2. (currently amended) The apparatus of claim 1, wherein the power ratio detector comprises:

an absolute value generator for receiving the symbols constituting the second signal and generating an absolute value of each of the symbols;

a sorter for sorting the absolute values generated by the absolute value generator in magnitude order;

an average value calculator for selecting the absolute values in a predetermined length among the sorted absolute values, and calculating the average value of the selected absolute values;

a squarer for calculating the square of the absolute value of the first signal; and

a power ratio generator for generating the power ratio by a ratio of the average value to the square of the absolute value of the first signal.

3. (original) The apparatus of claim 1, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

4. (original) The apparatus of claim 3, wherein the reference point is determined according to a modulation scheme of the second channel.

5. (previously presented) The apparatus of claim 3, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

6. (currently amended) An apparatus for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising:

an absolute value generator for receiving symbols constituting a first signal generated by channel-compensating ~~[[the]]~~a first channel signal;

a sorter for sorting the absolute values generated by the absolute value generator in magnitude order;

an average calculator for selecting the absolute values in a predetermined length among the sorted absolute values, and calculating an average value of the selected absolute values;

a squarer for calculating a square of an absolute value of a second signal generated by performing channel estimation using ~~[[the]]~~a second channel signal; and

a power ratio generator for generating the power ratio by a ratio of the average ~~[[power]]~~value to the square of the absolute value of the second signal.

7. (original) The apparatus of claim 6, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

8. (original) The apparatus of claim 7, wherein the reference point is determined according to a modulation scheme of the first channel.

9. (previously presented) The apparatus of claim 7, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

10. (currently amended) An apparatus for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising:

a channel estimator for generating a first signal by performing channel estimation using ~~[[the]]~~ a first channel signal;

a channel compensator for generating a second signal by channel-compensating ~~[[the]]~~ a second channel signal using the first signal; and

a power ratio detector for generating absolute values of symbols constituting the second signal, selecting absolute values in a predetermined length after sorting the absolute values in magnitude order, detecting a center value of the predetermined length, calculating a square of an absolute value of the first signal, and generating the power ratio using a ratio of the center value to the square of the absolute value of the first signal.

11. (currently amended) The apparatus of claim 10, wherein the power ratio detector comprises:

an absolute value generator for receiving the symbols constituting the second signal, and generating an absolute value of each of the symbols;

a sorter for sorting the absolute values generated by the absolute value generator in magnitude order;

a selector for selecting the absolute values in a predetermined length among the sorted absolute values, and selecting the center value of the predetermined length;

a squarer for calculating a square of an absolute value of the first signal; and

a power ratio generator for generating the power ratio by a ratio of the center value to the square of the absolute value of the first signal.

12. (original) The apparatus of claim 10, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

13. (original) The apparatus of claim 12, wherein the reference point is determined according to a modulation scheme of the second channel.

14. (original) The apparatus of claim 12, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

15. (currently amended) An apparatus for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising:

an absolute value generator for receiving symbols constituting a first signal generated by channel-compensating ~~[[the]]~~a first channel signal, and generating an absolute value of each of the symbols;

a sorter for sorting the absolute values generated by the absolute value generator in magnitude order;

a selector for selecting the absolute values in a predetermined length among the sorted absolute values, and selecting a center value of the predetermined length;

a squarer for calculating a square of an absolute value of a second signal generated by performing channel estimation using ~~[[the]]~~a second channel signal; and

a power ratio generator for generating the power ratio by a ratio of the center value to the square of the absolute value of the second signal.

16. (original) The apparatus of claim 15, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

17. (original) The apparatus of claim 16, wherein the reference point is determined according to a modulation scheme of the first channel.

18. (original) The apparatus of claim 16, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

19. (currently amended) An apparatus for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising:

a channel estimator for generating a first signal by performing channel estimation using ~~[[the]]~~ a first channel signal;

a channel compensator for generating a second signal by channel-compensating ~~[[the]]~~ a second channel signal using the first signal; and

a power ratio detector for generating absolute values of symbols constituting the second signal, calculating an average value of the absolute values, calculating a $1/2$ value of the average value, and then generating the power ratio by a ratio of the $1/2$ average value to a square of an absolute value of the second signal.

20. (currently amended) The apparatus of claim 19, wherein the power ratio detector comprises:

an absolute value generator for receiving the symbols constituting the second signal and generating an absolute value of each of the symbols;

an 1/2 average value calculator for calculating ~~[[an]]~~the average value of the absolute values and calculating ~~[[a]]~~the 1/2 value of the average value;

a squarer for calculating a square of an absolute value of the first signal; and

a power ratio generator for generating the power ratio by a ratio of the 1/2 average value to the square of the absolute value of the first signal.

21. (currently amended) An apparatus for generating a power ratio between a first channel and a second channel in a mobile communication system, comprising:

an absolute value generator for receiving symbols constituting a first signal generated by channel-compensating ~~[[the]]~~a first channel signal;

a 1/2 average value calculator for calculating an average value of the absolute values and calculating a 1/2 value of the average value;

a squarer for calculating a square of an absolute value of a second signal generated by performing channel estimation using ~~[[the]]~~a second channel signal; and

a power ratio generator for generating the power ratio by a ratio of the 1/2 average value to the square of the absolute value of the second signal.

22. (currently amended) A method for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising the steps of:

generating a first channel signal by performing channel estimation using
[[the]]a first channel signal;
generating a second signal by channel-compensating [[the]]a second channel
signal using the first signal; and
generating absolute values of symbols constituting the second signal, selecting
absolute values in a predetermined length after sorting the absolute values in
magnitude order, calculating an average value of the selected absolute values,
calculating a square of an absolute value of the first signal, and generating the power
ratio using a ratio of the average value to the square of the absolute value of the first
signal.

23. (original) The method of claim 22, wherein the predetermined length is a
length determined by separating the sorted absolute values into a predetermined
number of lengths centering on a preset reference point, selecting a length including a
minimum value of the absolute values among the predetermined number of lengths,
and selecting a preset length from the selected length.

24. (original) The method of claim 23, wherein the reference point is
determined according to a modulation scheme of the second channel.

25. (original) The method of claim 23, wherein the preset length includes
absolute values determined by excluding a preset number of absolute values among
absolute values existing in the selected length in descending order from a maximum

value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

26. (currently amended) A method for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising the steps of:

generating an absolute value of each of symbols constituting a first signal generated by channel-compensating ~~[[the]]~~ a first channel signal;
sorting the absolute values in magnitude order;
selecting absolute values in a predetermined length among the sorted absolute values, and calculating an average value of the selected absolute values;
calculating a square of an absolute value of a second signal generated by performing channel estimation using ~~[[the]]~~ a second channel signal; and
generating the power ratio by a ratio of the average value to the square of the absolute value of the second signal.

27. (original) The method of claim 26, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

28. (original) The method of claim 27, wherein the reference point is determined according to a modulation scheme of the first channel.

29. (original) The method of claim 27, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

30. (currently amended) A method for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising the steps of:

generating a first signal by performing channel estimation using ~~[[the]]~~ a first channel signal;

generating a second signal by channel-compensating~~[[the]]~~ a second channel signal using the first signal; and

generating absolute values of symbols constituting the second signal, selecting absolute values in a predetermined length after sorting the absolute values in magnitude order, calculating a center value of the predetermined length, calculating a square of an absolute value of the first signal, and generating the power ratio using a ratio of the center value to the square of the absolute value of the first signal.

31. (original) The method of claim 30, wherein the predetermined length is a length determined by separating the sorted absolute values into a predetermined number of lengths centering on a preset reference point, selecting a length including a minimum value of the absolute values among the predetermined number of lengths, and selecting a preset length from the selected length.

32. (original) The method of claim 31, wherein the reference point is determined according to a modulation scheme of the second channel.

33. (original) The method of claim 31, wherein the preset length includes absolute values determined by excluding a preset number of absolute values among absolute values existing in the selected length in descending order from a maximum value and a preset number of absolute values among the absolute values existing in the selected length in ascending order from a minimum value.

34. (currently amended) A method for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising the steps of:

generating an absolute value of each of symbols constituting a first signal
generated by channel-compensating [[the]]a first channel signal;
sorting the generated absolute values in magnitude order;
selecting absolute values in a predetermined length among the sorted absolute values and selecting a center value of the predetermined length;

calculating a square of an absolute value of a second signal generated by
performing channel estimation using ~~[[the]]~~ a second channel signal; and
generating the power ratio by a ratio of the center value to the square of the
absolute value of the second signal.

35. (original) The method of claim 34, wherein the predetermined length is a
length determined by separating the sorted absolute values into a predetermined
number of lengths centering on a preset reference point, selecting a length including a
minimum value of the absolute values among the predetermined number of lengths,
and selecting a preset length from the selected length.

36. (original) The method of claim 35, wherein the reference point is
determined according to a modulation scheme of the first channel.

37. (original) The method of claim 35, wherein the preset length includes
absolute values determined by excluding a preset number of absolute values among
absolute values existing in the selected length in descending order from a maximum
value and a preset number of absolute values among the absolute values existing in
the selected length in ascending order from a minimum value.

38. (currently amended) A method for detecting a power ratio between a
first channel and a second channel in a mobile communication system, comprising the
steps of:

generating a first signal by performing channel estimation using the a first channel signal;

generating a second signal by channel-compensating the a second channel signal using the first signal; and

generating absolute values of symbols constituting the second signal, calculating an average value of the absolute values, calculating a $1/2$ value of the average value, and then generating the power ratio by a ratio of the $1/2$ average value to a square of an absolute value of the first signal.

39. (currently amended) A method for detecting a power ratio between a first channel and a second channel in a mobile communication system, comprising the steps of:

generating an absolute value of each of the symbols constituting a first signal generated by channel-compensating the a first channel signal;

calculating an average value of the absolute values and calculating a $1/2$ value of the average value;

calculating a square of an absolute value of a second signal generated by performing channel estimation using the a second channel signal; and

generating the power ratio by a ratio of the $1/2$ average value to the square of the absolute value of the second signal.